81st RESTORATION ADVISORY BOARD MEETING
FORMER NAVAL CONSTRUCTION BATTALION CENTER DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND
NOTES FROM THE 20 SEPTEMBER 2012 MEETING

The 81st Restoration Advisory Board (RAB) meeting was held at the Quonset Development Corporation (QDC) Conference Center at 95 Cripe Street in North Kingstown, Rhode Island. The meeting agenda for the 81st RAB is included as Attachment A. The attendance list for the 81st RAB is included as Attachment B.

David Barney, the Navy's BRAC Environmental Coordinator, convened the meeting at approximately 7:00 PM on 20 September 2012.

NEXT RESTORATION ADVISORY BOARD MEETING

The next RAB meeting will be held on 28 March 2013 at 7:00 PM at the QDC Conference Center. The Navy will send out postcards prior to the next RAB meeting reminding the public of the date, time, and location of the next meeting.

LONG-TERM MONITORING UPDATES

Scott Anderson gave a brief update on long-term monitoring schedules:

Tetra Tech is currently at Allen Harbor Landfill completing the second Monitoring Event (ME) of the year, (ME 40). Work was split into two phases. The first phase, which is currently ongoing, consists of sampling monitoring wells and select piezometers (with co-located sediment sampling). A second phase will occur in mid-October and will consist of the sampling of shellfish, piezometers and sediment beyond the breakwater structure. Additionally, the grass will be cut and railings repaired in October 2012.

Tetra Tech completed ME 16 at Calf Pasture Point this summer (June/July). The next field event at Site 07 will be conducted in spring 2013. Additionally, off-shore surface water sampling was completed in July in support of the upcoming Five-Year review.

NAVY PRESENTATION: PRELIMINARY TIDAL STUDY RESULTS FOR SITE 07
(Attachment C)

Scott Anderson presented the results of a Tidal Study performed at Calf Pasture Point (Site 7). An overview of the presentation is as follows. The Tidal Study was performed in conjunction with EPA ADA in order to assess the direction and magnitude of groundwater flow and allow accurate calculations/estimations of groundwater migration rates. A total of 34 transducers were installed (14 wells and staff gauge evaluated by Tetra Tech and 19 wells evaluated by EPA ADA). Data was recorded (every 15 minutes) from March 21 through June 11, 2012. The staff gauge (installed in Allen Harbor) showed a variable tidal range from 3 feet to 6 feet. Tidal ranges vary in an alternating fashion from tide to tide on a daily basis (6 feet to 5 feet and 4 feet to 3 feet). For approximately 10 to 14 days of the month, the tides alternate from 6 to 5 feet and for the remainder of the month, the tides alternate from 3 to 4 feet. As would be expected, the magnitude of tides decreases as distance from the shoreline increases. Additionally, the shape of low tides varies from low tide to low tide, and, the time of low/high tide is offset compared to the staff gauge, diverging pending on the distance of the well from the shoreline. Figures were presented that depict the shallow/intermediate and deep groundwater zones for tidal ranges of 6.3 feet and 3.9 feet. Figures were also presented that show the flow nets along the primary flow direction from the former drum disposal area to the Entrance Channel. General observations based on these figures were:

1) during a typical tidal cycle, groundwater flow is both to the on-shore and to the off-shore directions;

2) at high tide, groundwater flow is northerly from the Entrance Channel to the onshore area, extending to DPT-39-3;

3) during mid- and low-tides, groundwater flow is generally southwesterly toward the Entrance Channel; and, generally, the gradient is quite small between DPT-39-3 to MW07-42I.

Steve King asked, when will the plume reach the shoreline? Scott Anderson responded that this was discussed during the BCT meeting today and the estimate is approximately 34 years. However, this is just for groundwater and does not necessarily reflect when the plume will reach the shoreline. Steve King also asked if the old shoreline was taken into account in the analysis and how does the configuration of the old shoreline impact the analysis. Scott Anderson responded that the old shoreline was considered; however, the emphasis was on the current orientation/configuration of the shoreline. One of the meeting attendees asked, what was the goal of the Tidal Study? Scott Anderson and the Navy responded that the

data will be used to refine the long term monitoring plan (LTMP) for Site 07 and to support the Five Year Review scheduled to be published in the spring of 2013.

SITE 16 UPDATE

The Proposed Plan for Site 16 was published in June of 2012. D. Barney explained that the Navy is currently working with EPA Region I and RIDEM to balance/reconcile the goals and needs of all stakeholders, and then publish a draft final version of the Proposed Plan

CED AREA AND QDC OUTFALL001 UPDATE

Navy indicated that, based on the data presented in the *Drain Line Investigation and Data Report for the CED Area/QDC Outfall 001*, the QDC Outfall 001 will be designated a separate operable unit (OU). The Outfall 001 area, which is associated with the CED area, includes pipelines and catch basins and an outfall to the northeast of the CED area. A Sampling and Analysis Plan (SAP) will be prepared to outline the investigative program needed to support the remedial investigation (RI) for this OU. It is anticipated that the SAP will be published in the spring of 2013. L Sinagoga explained that the Navy continues to move toward finalization of the environmental documents and risk management decisions for the CED area. In the CED area, a risk assessment was conducted for the soil contamination at the 4 sites that comprise the CED area. That assessment will be the basis of any remedial action recommended for the CED area.

OPEN MEETING

D. Barney opened the meeting for questions. S. King stated that a dredging project (using a barge) was planned for the channel at the opening of Allen Harbor (in the vicinity of the sandy point that extends southward from Site 07). The necessary USACE permits have been procured and the project is likely to be completed mid-October through Thanksgiving of this year. Mr. King also stated that the CED area may be needed in the near future for further expansion of operations currently existing in the developed portion of Site 16. No one had further questions/comments; the meeting was concluded.

Tonight's meeting concluded at approximately 7:50 P.M.

ATTACHMENT A

RAB AGENDA

AGENDA
FORMER NCBC DAVISVILLE
81st Restoration Advisory Board (RAB) Meeting

Date: September 20, 2012
Time: 7:00 P.M.
Location: 95 Cripe Street, North Kingstown, Rhode Island

RAB Meetings – Next Meeting Date

Long-Term Monitoring Program Updates

- Site 09: Allen Harbor Landfill
- Site 07: Calf Pasture Point

Navy Presentation: Preliminary Tidal Study Results

Site 16 Proposed Plan Update

CED Area and QDC Outfall 001 Update

ATTACHMENT B

RAB ATTENDANCE LIST

FORMER NCBC DAVISVILLE
RAB MEETING ATTENDANCE LIST
20 SEPTEMBER 2012 – 7:00 PM
95 CRIPE STREET – QDC CONFERENCE CENTER

Name	Affiliation	Phone	email
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RICH GOTTLIEB	RIDEM	401-222-2797x7138	RICHARD.GOTTLIEB@DEM.RI.GOV
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EJ TURNER	SEABEE VETS	401 248-4777	CBETX-1DV@COX.NET

ATTACHMENT C

SITE 07 TIDAL STUDY EVALUATION

TETRA TECH

Preliminary Site 7 Calf Pasture Point Tidal Study Evaluation

Former NCBC Davisville

81st Restoration Advisory Board (RAB) Meeting

September 20, 2012

Presented by:

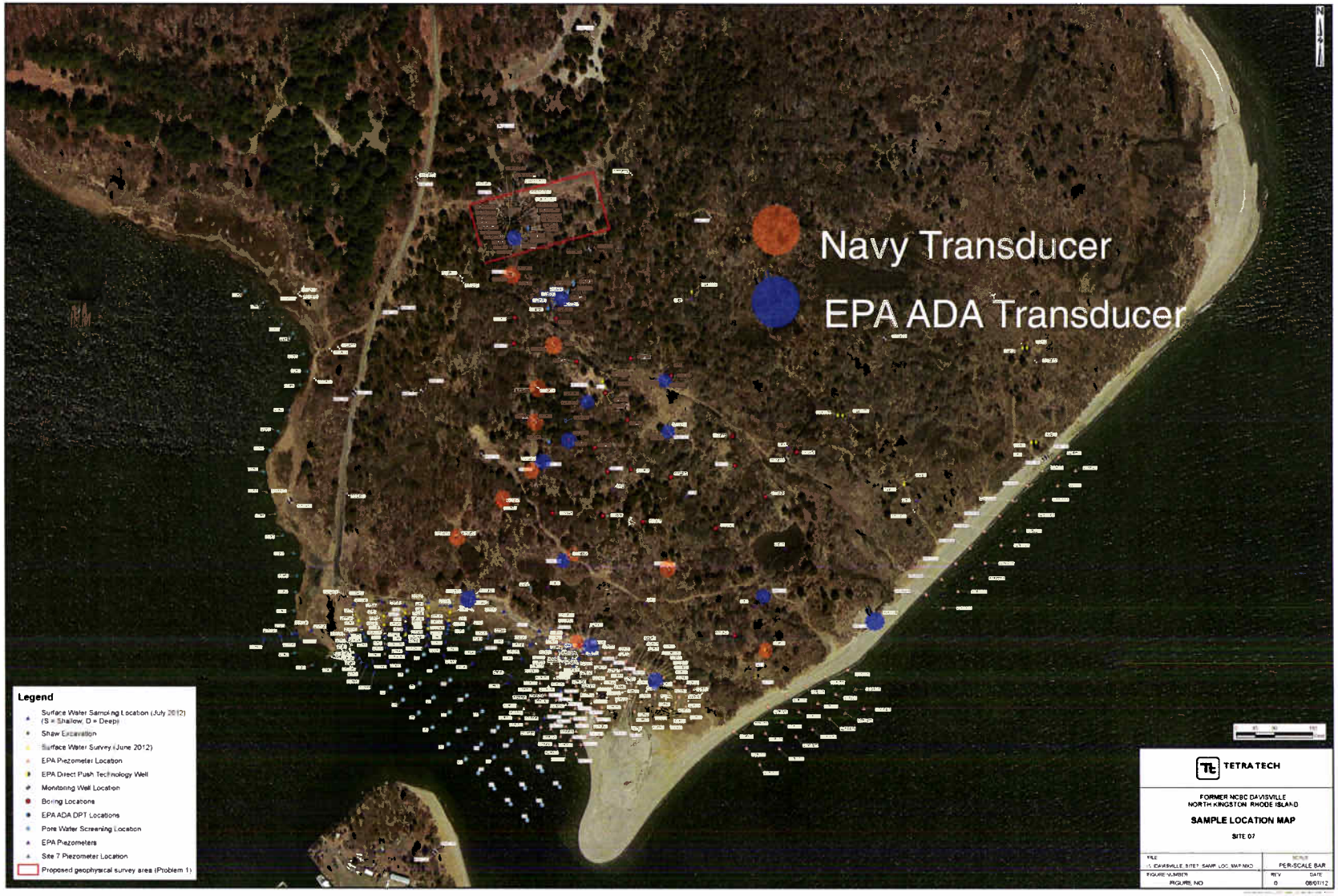
Scott R. Anderson

Site 7 Calf Pasture Point Tidal Study - Background

- Tidal Study performed to assess tidal impacts on Site 7 groundwater monitoring wells and shoreline
  - Goals of Tidal Study
    - Assess direction & magnitude of groundwater flow
    - Allow accurate calculation/estimation of migration rates
- 34 transducers/data loggers installed
  - Navy – 14 wells, 1 staff gauge, 1 barometer
  - EPA ADA – 19 wells, 2 barometers
- Tidal Study performed from March 21 to June 11
  - Water levels recorded every 15 minutes
    - Results in nearly 8000 records

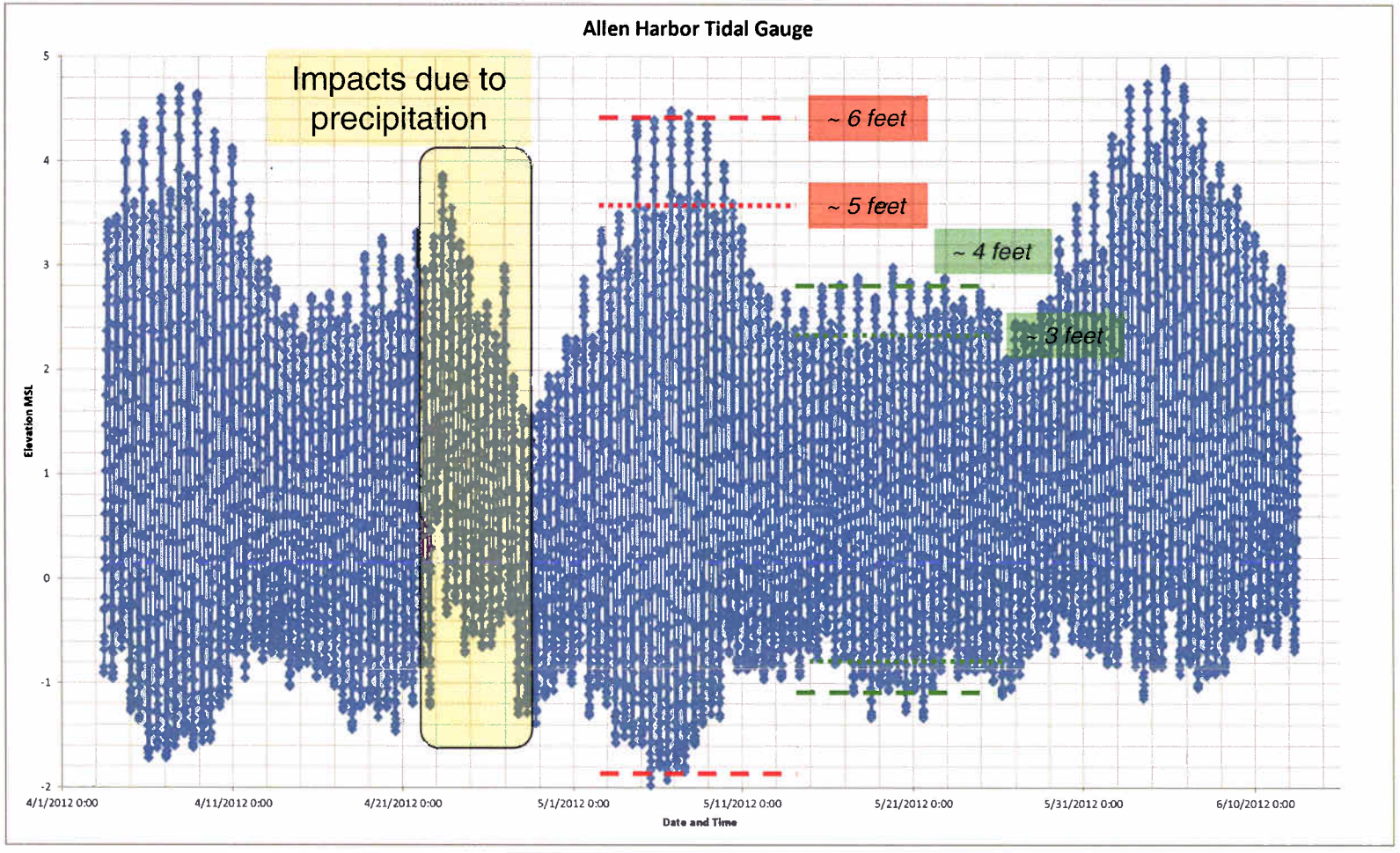
TETRA TECH

Site 7 Calf Pasture Point Tidal Study - Background



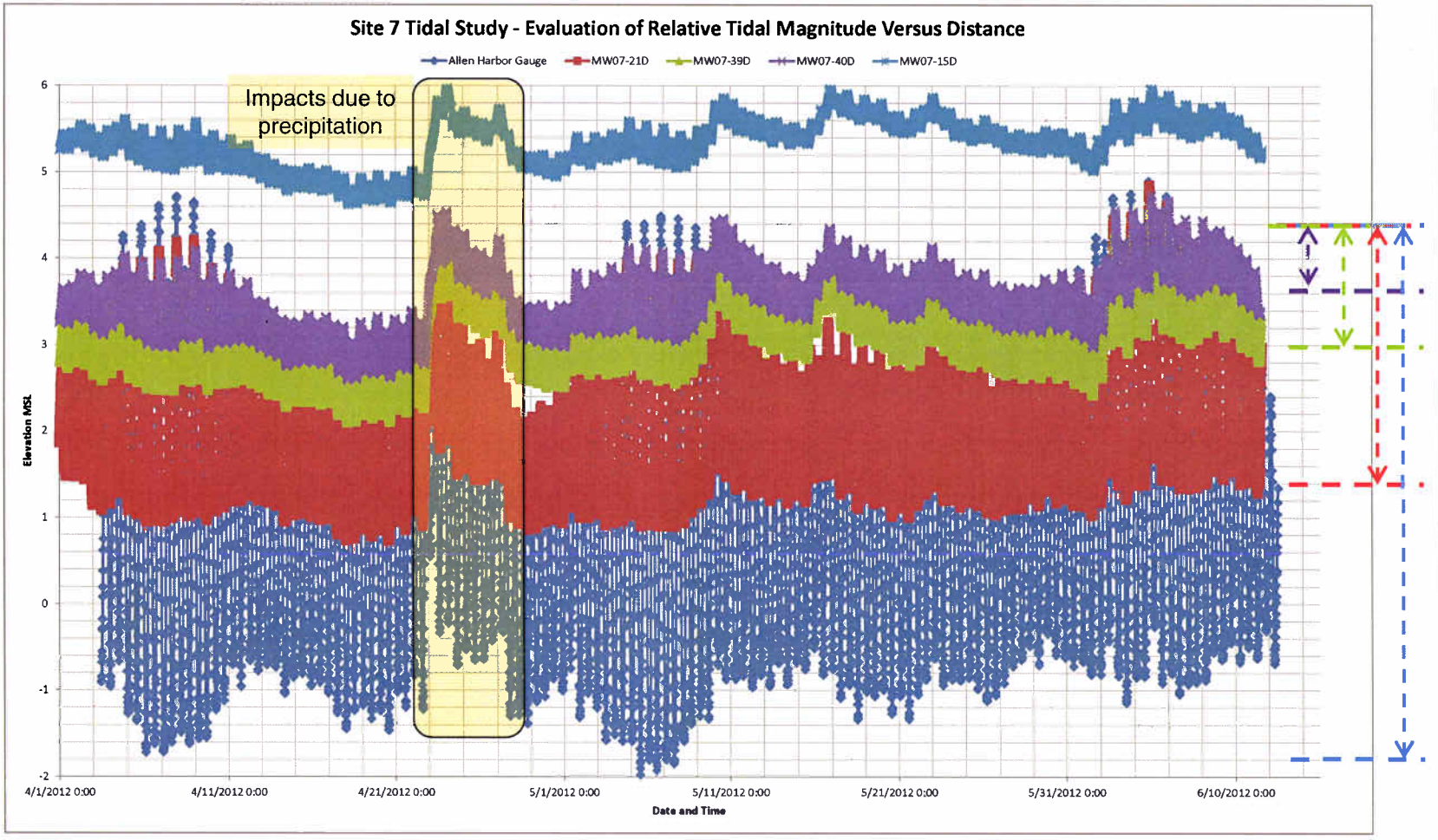
TETRA TECH

Site 7 Calf Pasture Point Tidal Study – Staff Gauge



TETRA TECH

Site 7 Calf Pasture Point Tidal Study – Evaluation



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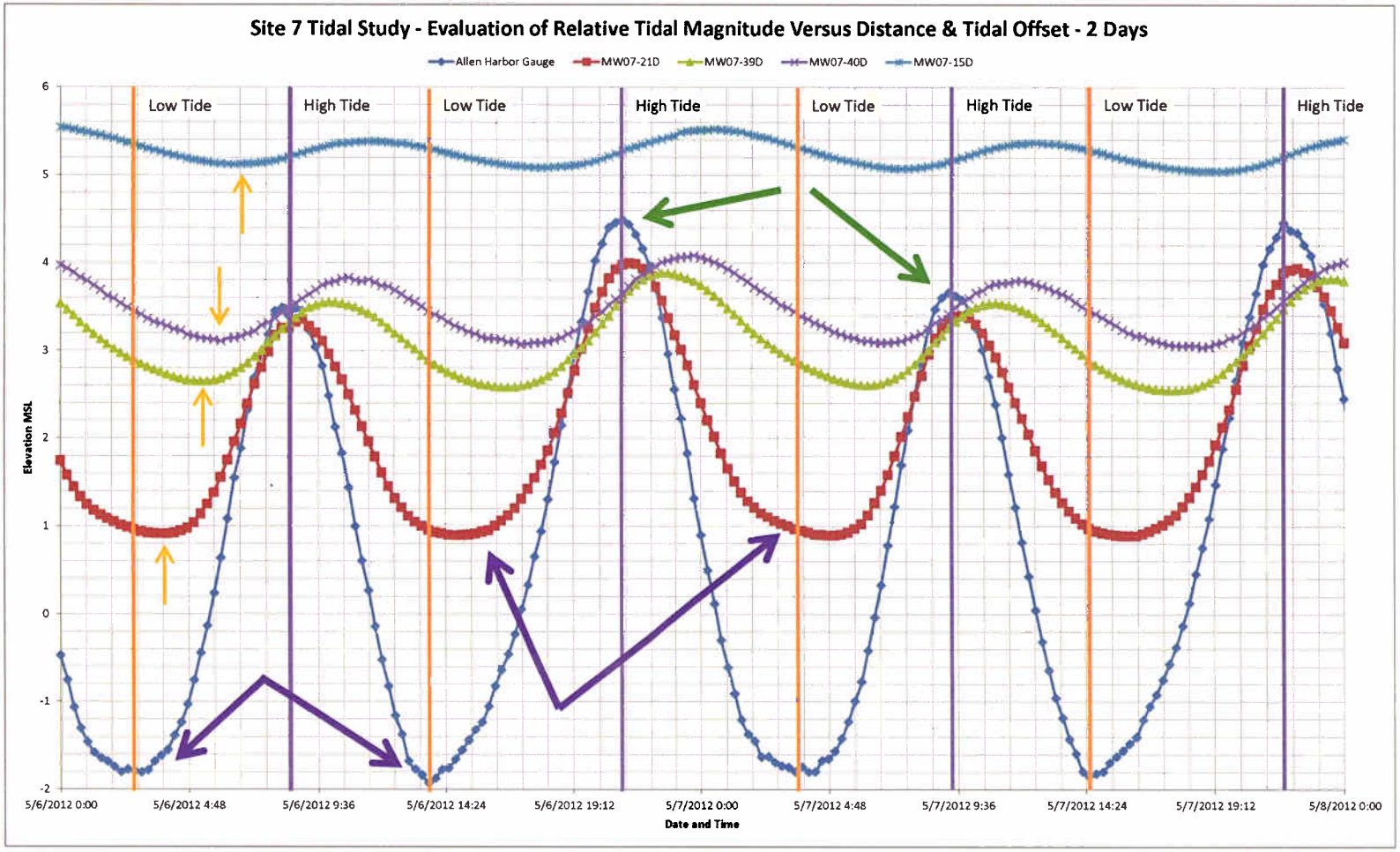
Site 7 Calf Pasture Point Tidal Study – Evaluation



TETRA TECH

Site 7 Calf Pasture Point Tidal Study - Evaluation

General Observations -

- Two Distinct Ranges in Tides per Day, Four Distinct Ranges observed throughout Month
  - Approximately 6.3 feet (Largest), Approximately 4.9 feet (Mid), Approximately 3.9 feet (Average), Approximately 3.1 feet (Lowest)
- Larger precipitation events affect water levels
- Magnitude of Tidal Range decreases with distance from shoreline
- Tidal offset increases with distance from shoreline
  - Tidal cycle almost out of phase at furthest onshore locations
- Rate of change per unit time non-uniform in harbor and near shore, smoothing out with distance onshore

TETRA TECH

Site 7 Calf Pasture Point Tidal Study – Evaluation

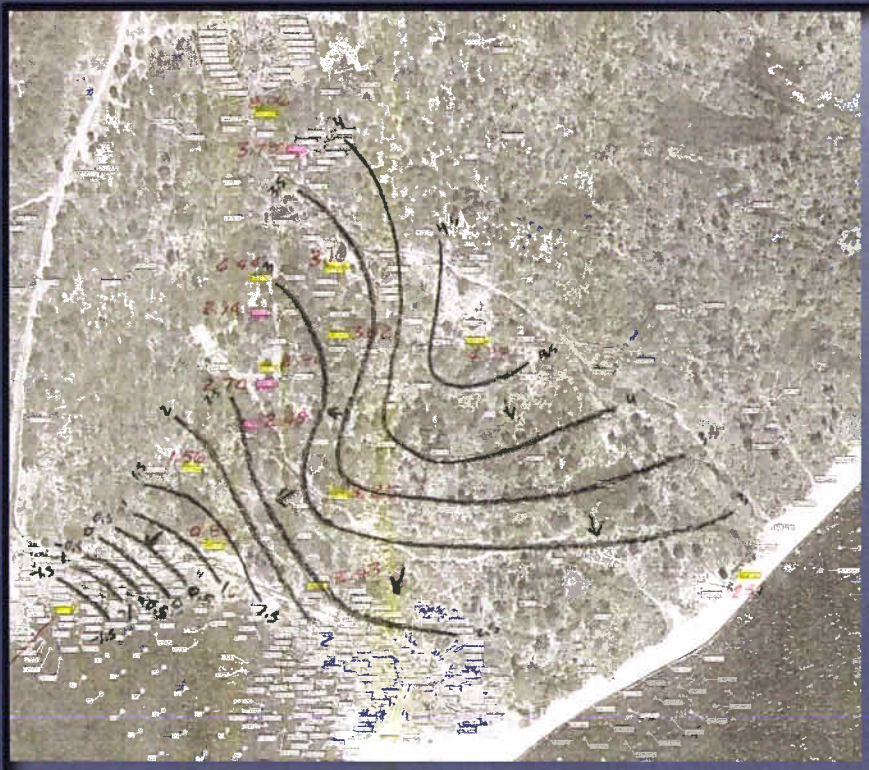
Shallow/Intermediate GW

Deep GW

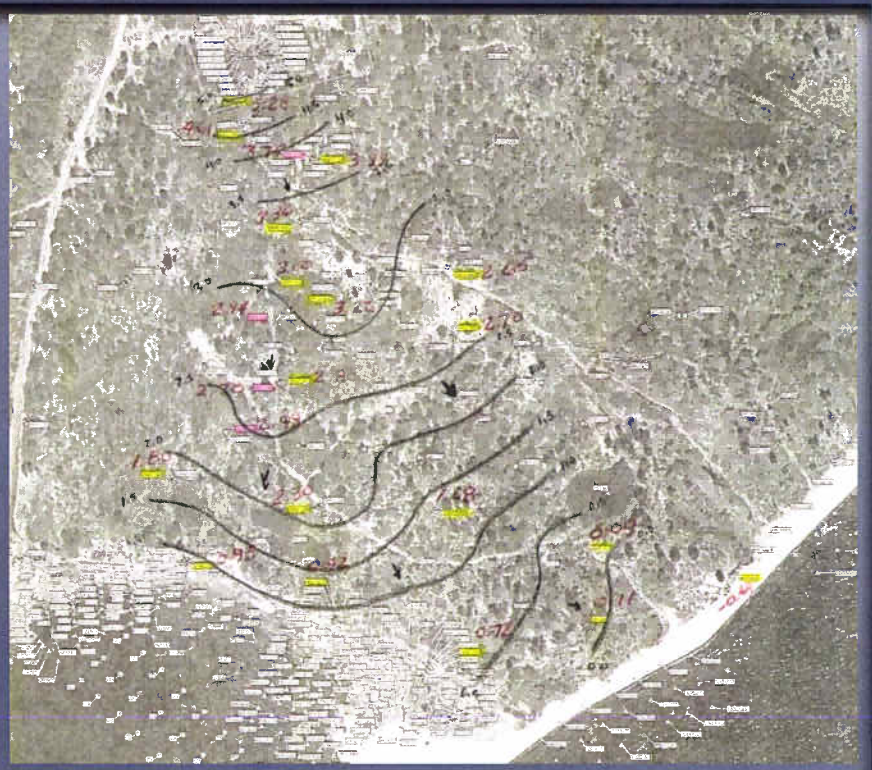
- Large Tidal Range (Approximately 6.3 feet), High Tide

TETRA TECH

Site 7 Calf Pasture Point Tidal Study – Evaluation



Shallow/Intermediate GW



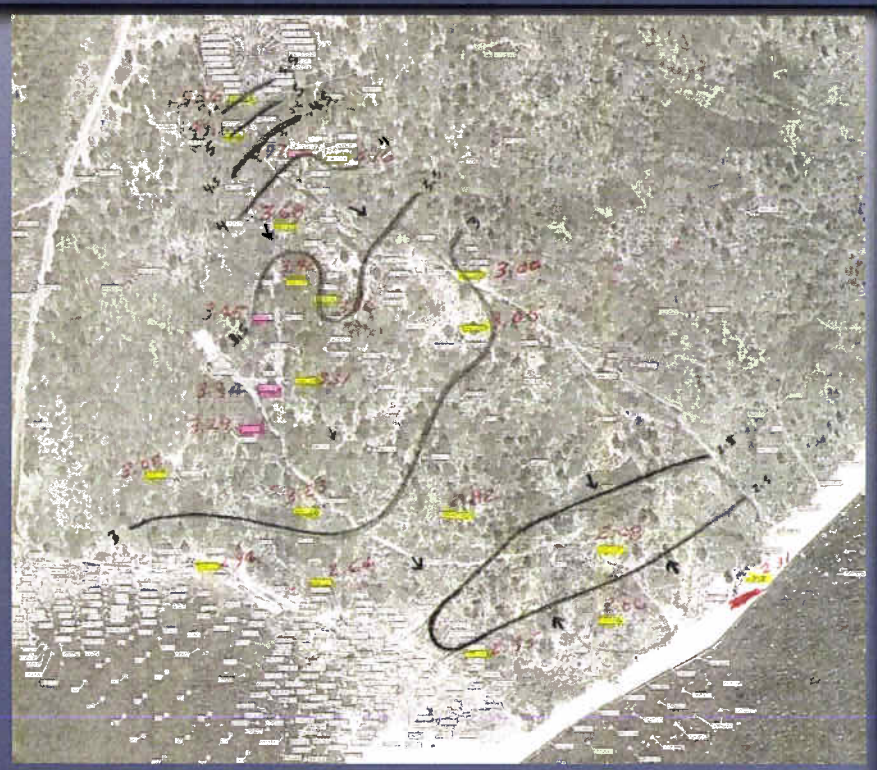
Deep GW

- Large Tidal Range (Approximately 6.3 feet), Low Tide

TETRA TECH

Site 7 Calf Pasture Point Tidal Study – Evaluation

Shallow/Intermediate GW

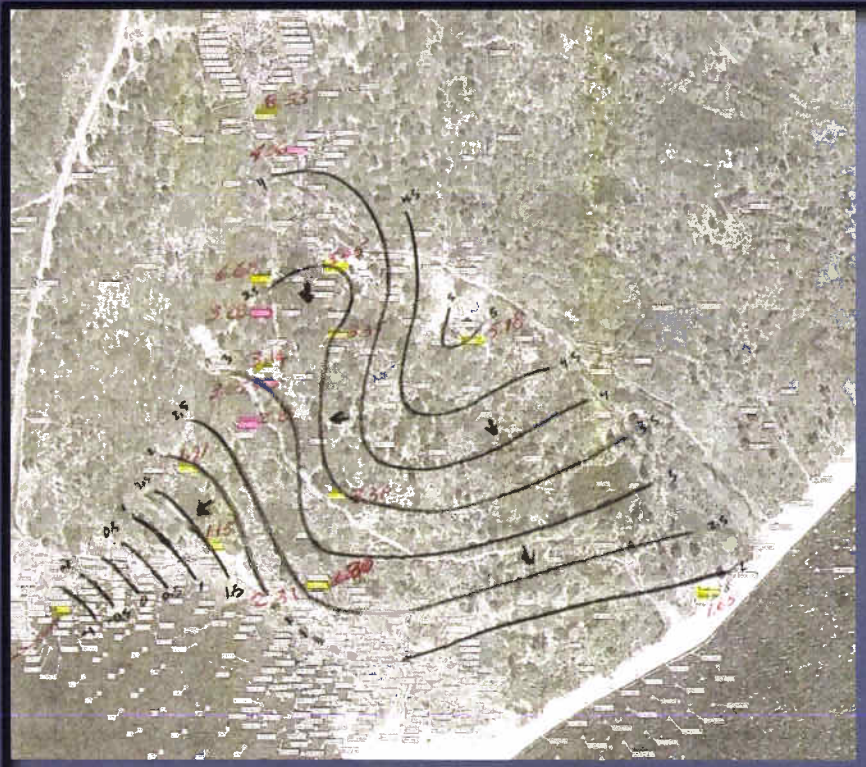


Deep GW

- Average Tidal Range (Approximately 3.9 feet), High Tide

TETRA TECH

Site 7 Calf Pasture Point Tidal Study – Evaluation



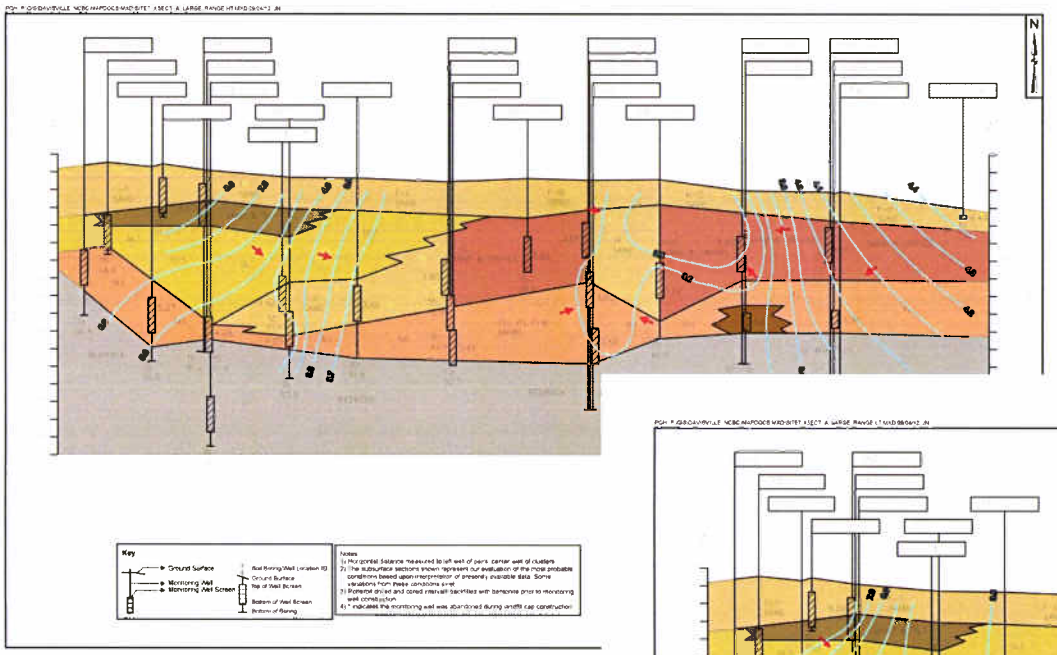
Shallow/Intermediate GW

Deep GW

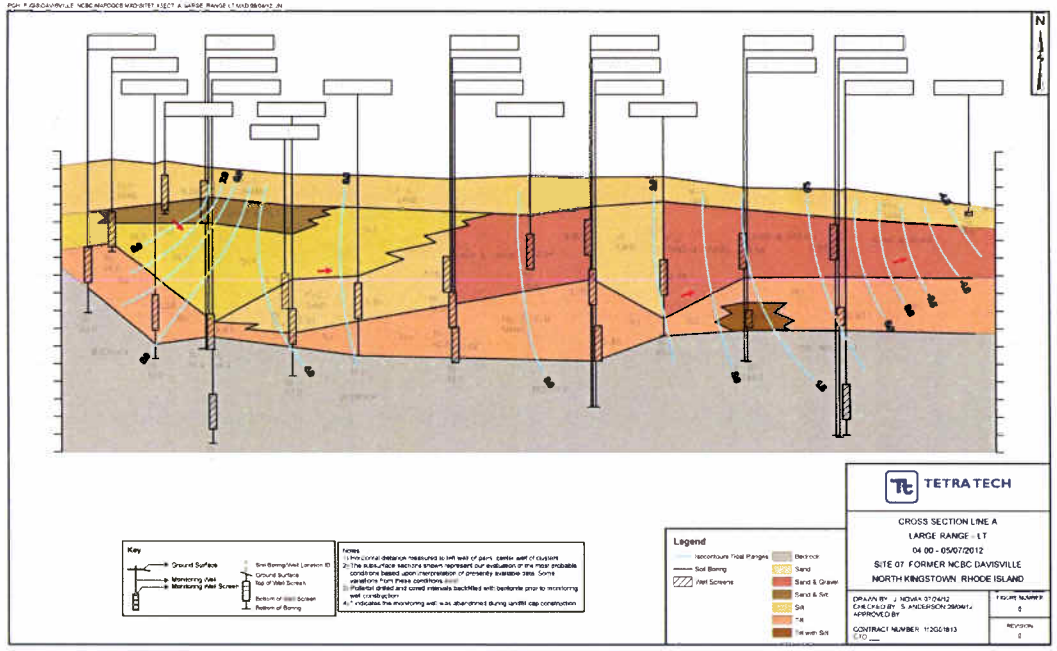
- Average Tidal Range (Approximately 3.9 feet), Low Tide

TETRA TECH

Site 7 Calf Pasture Point Tidal Study – Evaluation



High Tide

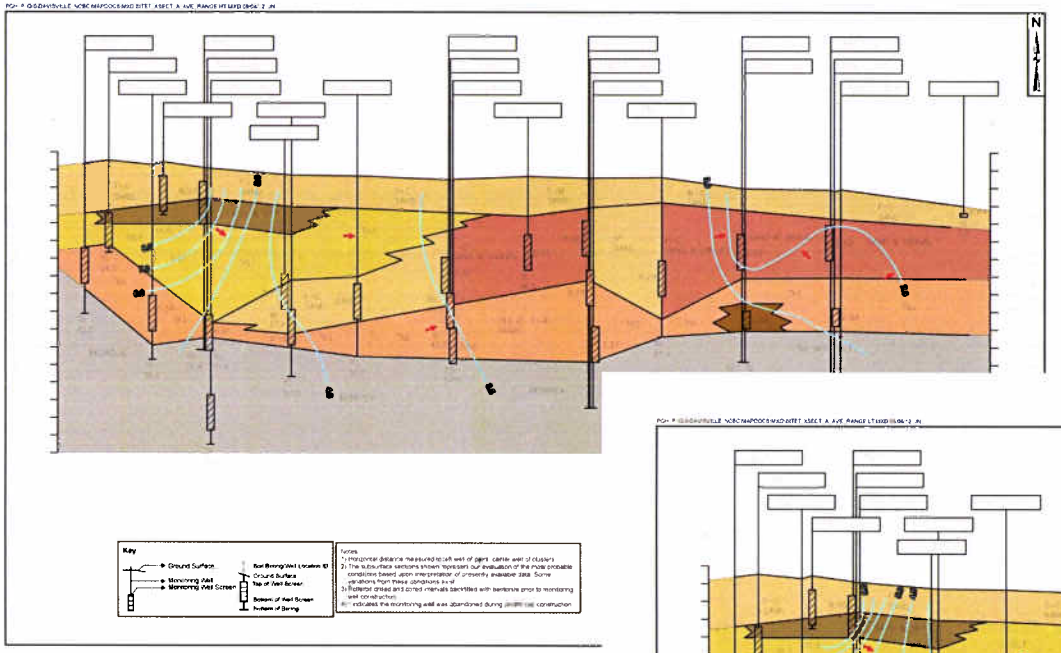


Low Tide

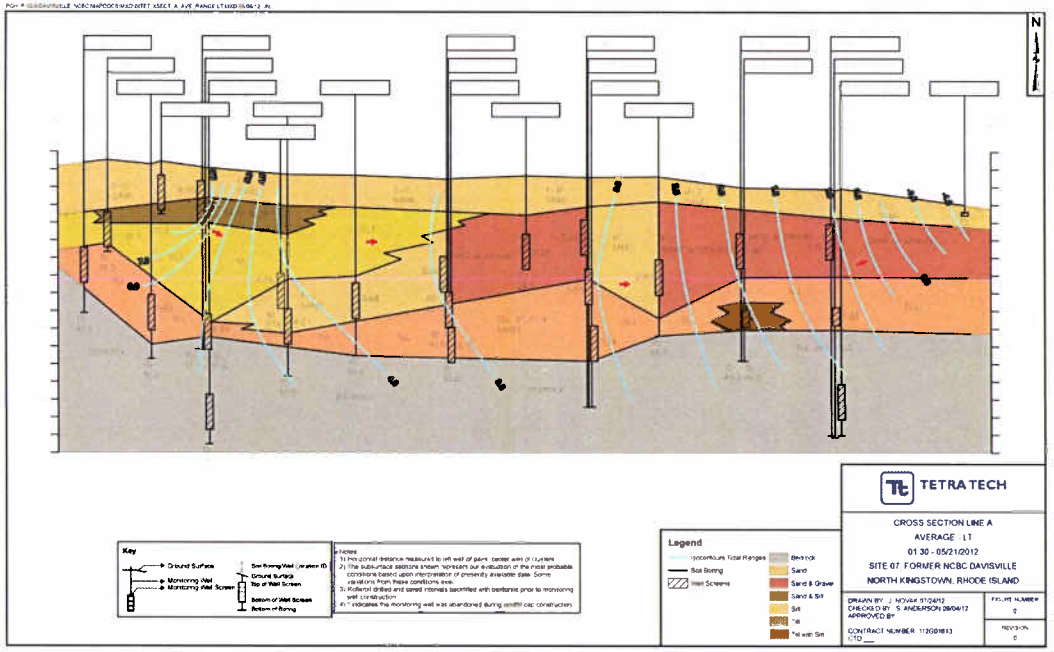
Large Tidal Range (Approximately 6.3 feet)

TETRA TECH

Site 7 Calf Pasture Point Tidal Study – Evaluation



High Tide



Low Tide

Average Tidal Range (Approximately 3.9 feet)

TETRA TECH

Site 7 Calf Pasture Point Tidal Study - Evaluation

General Observations, Spatial Analysis -

- During a typical tidal cycle (regardless of tidal magnitude), groundwater flow is both to the onshore and offshore, depending on position within tide
- Around High tides, groundwater flow is northerly from the Entrance Channel to onshore
  - Maximum onshore extent that can be reached is approximately DPT-39-3 cluster, though typically centered near MW07-42I
  - Magnitude and location of onshore extent different with each tidal range – decreasing in magnitude and being closer to shoreline as tidal range decreases
- During Mid and Low tides, groundwater flow is generally southwesterly toward the Entrance Channel
- Generally, gradient is small between DPT-39-3 to MW07-42I

TETRA TECH